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DEPARTMENT OF HEALTH SERVICES
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May 31, 2005

TO: Each Supervisor

FROM: Thomas L. Garthwaite, M.D.
Director and Chief Medical Officer



Jonathan E. Fielding, M.D., M.P.H.
Public Health Director and Health Officer

SUBJECT: **INFANT MORTALITY IN THE ANTELOPE VALLEY**

On April 13, 2004, the Board approved a motion by Supervisor Antonovich instructing the Director of Health Services to convene a working group of Public Health staff and community agencies to address the alarming rate of infant mortality among African Americans in the Antelope Valley. On July 6, 2004, the Board accepted the 2004 report, *Infant Mortality Among African Americans in the Antelope Valley* and directed Public Health to provide periodic progress reports.

The attached report is an update to our last report to the Board regarding our efforts to address Infant Mortality in the Antelope Valley - Service Planning Area 1 (SPA 1). Over the last year, the Area Health Officer for SPA 1 and the Director of Maternal, Child, and Adolescent Health Programs have collaborated with key community agencies, health care providers and residents to address the high infant mortality rates in the Antelope Valley, utilizing a community collaborative approach and resulting in the formation of the Antelope Valley Best Babies Collaborative (AVBBC). The report also includes the final analysis of the infant mortality data from the Fetal Infant Mortality Review of 2002 infant deaths, the summary of the findings from the Los Angeles Mommy and Babies Survey (LAMBS) in the Antelope Valley, and preliminary 2003 Infant Mortality data.

Each Supervisor
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As we continue to address this ongoing issue, it is important to note two new developments in the overall preliminary analysis of the 2003 infant mortality data for Antelope Valley. First while the overall infant mortality rate in the Antelope valley has dropped from 10.6 to 9.7 infant deaths per 1,000 live births, the African American infant mortality rate has dropped significantly from 32.7 per 1000 live births in 2002 to 16 per 1000 live births in 2003. While this is a significant drop in the infant death rate for this population, it is still nearly three times higher than the overall County rate of 5.4 infant deaths per 1,000 live births. Second, the preliminary analysis for 2003 indicates that the rate among Hispanics has increased from 6.6 per 1000 live births in 2002 to 11.1 per 1000 live births for 2003. Hispanics represent more than half of the total of 48 infant deaths in SPA 1 in 2003.

The Antelope Valley Black Infant Health Program was implemented in 2002. While it certainly cannot account for all of the decrease in infant mortality among African Americans in the Antelope Valley in 2003, it is most likely a factor. The increase of the infant mortality rate among Hispanics indicates that we need to remain vigilant and continue the work outlined in the new recommendations in the report.

If you have questions or require additional information, please let me know.

TLG:JEF:dd
404:011 (2107)

Attachments

c: Chief Administrative Officer
County Counsel
Executive Officer, Board of Supervisors



COUNTY OF LOS ANGELES
DEPARTMENT OF HEALTH SERVICES
Public Health



Infant Mortality in the Antelope Valley Follow-up Report to the Board of Supervisors May 2005

Prepared by:

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Executive Summary

On April 13, 2004, the Los Angeles County Board of Supervisors approved a motion by Supervisor Antonovich instructing the Director of Health Services to convene a working group of Public Health staff and community agencies to address the alarming rate of infant mortality among African Americans in the Antelope Valley. On July 6, 2004, the Board accepted the 2004 report, *Infant Mortality Among African Americans in the Antelope Valley* and directed Public Health to provide periodic progress reports. This is the final report that summarizes the findings from the two research projects that were conducted to understand the underlying risk factors contributing to the increase in infant mortality, and documents the community collaborative activities that were conducted. Finally it presents new recommendations for on-going work to address infant mortality.

Summary of Research Findings

Fetal Infant Mortality Review (FIMR)

Public Health staff conducted a review of 53 infant deaths with the following findings:

- Babies born too early and too small were at the greatest risk
- Mothers often entered care after the 12th week of pregnancy
- Many of the mothers had previous fetal losses
- Psychosocial issues were prevalent
- Risk appropriate care was not always accessible

Los Angeles Mommy and Baby Survey (LAMBS)

LAMBS was a mail-in and telephone survey sent to women living in the Antelope Valley who delivered a live infant between May and July of 2004. 368 women completed and returned the survey. Significant findings show that mothers with low birthweight or preterm infants were more likely than other mothers to:

- Lack health insurance before pregnancy
- Have given birth to a low birthweight or preterm infant in the past
- Have high blood pressure before or during pregnancy
- Receive inadequate prenatal care
- Experience early labor pain and have their water break early
- Smoke during pregnancy
- Feel their neighborhood was unsafe
- Feel less happy during pregnancy

Preliminary Analysis of 2003 Infant Mortality

Two issues stand out in the preliminary review of the 2003 infant mortality data for the Antelope Valley. First while the overall infant mortality rate in the Antelope valley has dropped from 10.6 to 9.7 infant deaths per 1,000 live births, the African American infant mortality rate has dropped significantly from 32.7 per 1000 live births in 2002 to 16 per 1000 live births in 2003. While this is a significant drop in the infant death rate for this population, it is still nearly three times higher than the overall County rate of 5.4 infant

deaths per 1,000 live births. Second, the preliminary analysis for 2003 indicates that the rate among Hispanics has increased from 6.6 per 1000 live births in 2002 to 11.1 per 1000 live births for 2003. Hispanics represent more than half of the total of 48 infant deaths in SPA 1 in 2003. The increase of the infant mortality rate among Hispanics indicates that we need to remain vigilant and continue the work outlined in the new recommendations in the report.

Recommendations

Three recommendations for on-going work were developed and will be carried out by the Area Health Officer SPA 1, the Maternal, Child and Adolescent Health Programs and members of the newly formed Antelope Valley Best Babies Collaborative. The three recommendations are:

Recommendation 1:

Conduct ongoing surveillance of infant deaths in Los Angeles County

Recommendation 2:

Increase capacity and target access to high risk family support programs for Antelope Valley women at-risk and their families

Recommendation 3:

Collaborate with local health care providers to ensure quality care for at-risk women and their infants.

Background

In April 2004, the Los Angeles County Board of Supervisors approved a motion by Supervisor Antonovich instructing the Director of Health Services to convene a working group of Public Health staff and community agencies to address the alarming rate of infant mortality among African Americans in the Antelope Valley. On July 6, 2004, the Board accepted the 2004 report, *Infant Mortality Among African Americans in the Antelope Valley* and directed Public Health to provide periodic progress reports.

In response, the Area Health Officer and the Director of Maternal, Child and Adolescent Health Programs (MCAH) met with key community stakeholders to develop a list of action steps to address the problem. The five recommendations they presented to the Board were:

RECOMMENDATION 1: Increase capacity and target access to high risk family support programs for African American women and their families.

RECOMMENDATION 2: Decrease barriers to accessing care by increasing the number of women and infants that have medical insurance.

RECOMMENDATION 3: Collaborate with and educate local health care providers to ensure quality care for African American women and their infants.

RECOMMENDATION 4: Conduct an education and outreach/marketing campaign aimed at African American women and the local community regarding healthy life practices.

RECOMMENDATION 5: Conduct research to determine the causes of infant mortality in the Antelope Valley.

Since that time, Public Health has collaborated with various sectors of the community in the Antelope Valley including health providers, faith-based organizations, social service providers and concerned residents to address the infant mortality problem, with assistance from the Los Angeles Best Babies Collaborative (LABBC). In our follow-up reports to the Board over the last year, we have outlined our progress in addressing the five recommendations listed above.

In addition we conducted the following activities to enhance and strengthen our work in addressing infant mortality:

- Wrote grants to increase funding and augment resources for pregnant women
- Met with various stakeholders to develop and discuss [Interconception Care] Financing
- Partnered with local health care providers to review infant mortality data and make recommendations regarding issues impacting access to prenatal care
- Developed policy recommendations for CPSP implementation in DHS facilities

- Assured lactation consultant availability for clients in high risk case management programs
- Engaged the local faith community to take a lead role in community support and mentoring for women and families at risk
- Developed a community health messaging program to address healthy births in collaboration with the Los Angeles Best Babies Collaborative.

As the specific work around the five recommendations has been completed and/or continues, a new collaborative has been formed, the Antelope Valley Best Babies Collaborative (AVBBC), to provide ongoing action to improve birth outcomes in the Antelope Valley. The AVBBC consists of over 40 local agencies, health care providers, the faith community, residents, SPA 1 Area Health Office, MCAH staff, and staff from the LABBC. Major local agencies participating include the Antelope Valley Black Infant Health Project, Healthy Homes of Antelope Valley Hospital, and Antelope Valley Partners for Health. AVBBC was recently selected to receive a planning grant as part of the Healthy Births Initiative funded by First Five LA.

In this report we present the findings from two research projects: 1) the Fetal Infant Mortality Review (FIMR) of 2002 SPA 1 Infant Deaths; and 2) the Los Angeles Mommy and Baby Survey (LAMBS) targeting women who delivered a live infant between May and July of 2004 in the Antelope Valley. We also present new recommendations to strengthen our ability to address infant mortality in Los Angeles County. While Antelope Valley will continue to be a priority, the lessons learned from our research and community collaborative work will be applied and replicated in other areas of the County.

I. SUMMARY OF RESEARCH FINDINGS

FETAL INFANT MORTALITY REVIEW (FIMR)

Public Health conducted medical record abstraction and maternal interviews using tools from the National Fetal Infant Mortality Review. MCAH staff trained Public Health Nurses from SPA 1 to collect the data that was then analyzed by staff from MCAH. The review included 53 infant deaths, with access to nearly 80% of the records as well as autopsy reports on post-neonatal deaths.

Significant findings included the following issues experienced by mothers and infants living in SPA 1:

- Babies born too early and too small were at the greatest risk
- Mothers often entered care after the 12th week of pregnancy
- Many of the mothers had previous fetal losses
- Psychosocial issues were prevalent
- Risk appropriate care was not always accessible

Appendix 1 contains the full report.

LOS ANGELES MOMMY AND BABY SURVEY (LAMBS)

The LAMB Survey was sent to women living in the Antelope Valley who delivered a live infant between May and July of 2004. Three hundred and sixty eight (368) women completed and returned the survey.

Significant findings show that mothers with low birthweight or preterm infants were more likely than other mothers to:

- Lack health insurance before pregnancy
- Have given birth to a low birthweight or preterm infant in the past
- Have high blood pressure before or during pregnancy
- Receive inadequate prenatal care
- Experience early labor pain and have their water break early
- Smoke during pregnancy
- Feel their neighborhood was unsafe
- Feel less happy during pregnancy

Appendix 2 contains the full report.

II. ANTELOPE VALLEY BEST BABIES COLLABORATIVE (AVBBC)

On May 4, 2005, the Antelope Valley Best Babies Collaborative (AVBBC) convened a large meeting of its collaborative partners to determine short and long term interventions based on the data presented from the FIMR and LAMBS studies. The interventions include programs and tasks that require the collaboration of agencies and the local community as key to successful birth outcomes. Those interventions will be utilized to set the direction for the Core Approaches in the AV Healthy Births Initiative, based on a framework developed by LABBC, funded by First 5 LA, with Antelope Valley Partners for Health as the lead/convening agency.

The Core Approaches for this program include:

- Policy and Advocacy
- Health Educations and Messaging
- Prenatal Care Quality Improvement
- Outreach
- Case Management
- Community Building
- Social Support

AVBBC provides the ongoing network of agencies to create a safety net that will support healthy birth outcomes in the Antelope Valley. AVBBC will continue to be the primary point of collaboration and support from Public Health, including the Area Health Office and the MCAH Program.

III. PRELIMINARY 2003 INFANT MORTALITY DATA

As noted in Figure 1 below, infant mortality rates for Los Angeles County continue to remain stable since 2001. Preliminary analysis of the 2003 data indicate that the African American infant mortality rate continues to be over two times as high as the rate for other ethnic groups.

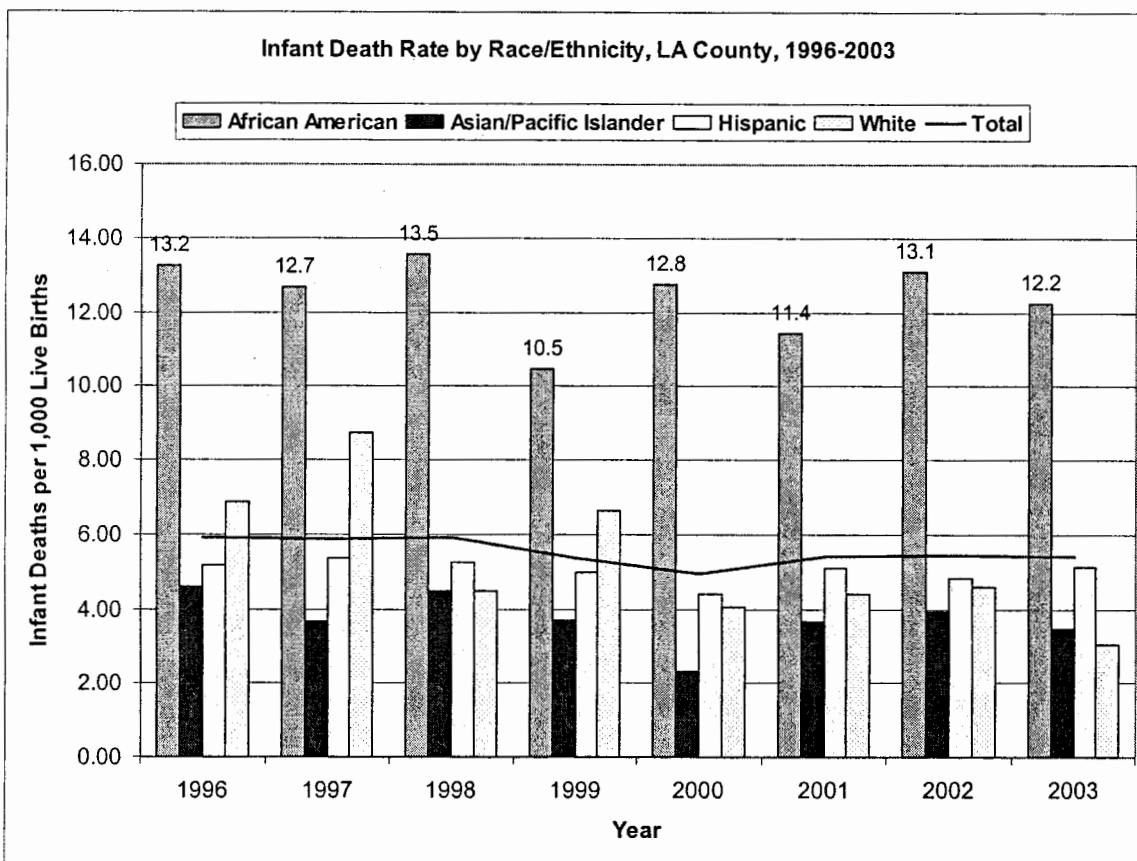


Figure 1.

However, in the Antelope Valley, significant changes have occurred, including a decrease in the rate of African American infant deaths and an increase in the rate of Hispanic infant deaths, as shown in Figure 2 below. Of note is the fact that the AV Black Infant Health Program was implemented in 2002. While it certainly cannot account for all of the decrease in infant mortality among African Americans in the Antelope Valley, it is most likely a significant factor. The increase of the infant mortality rate among Hispanics indicates that we need to remain vigilant and continue the work outlined in the remainder of this report.

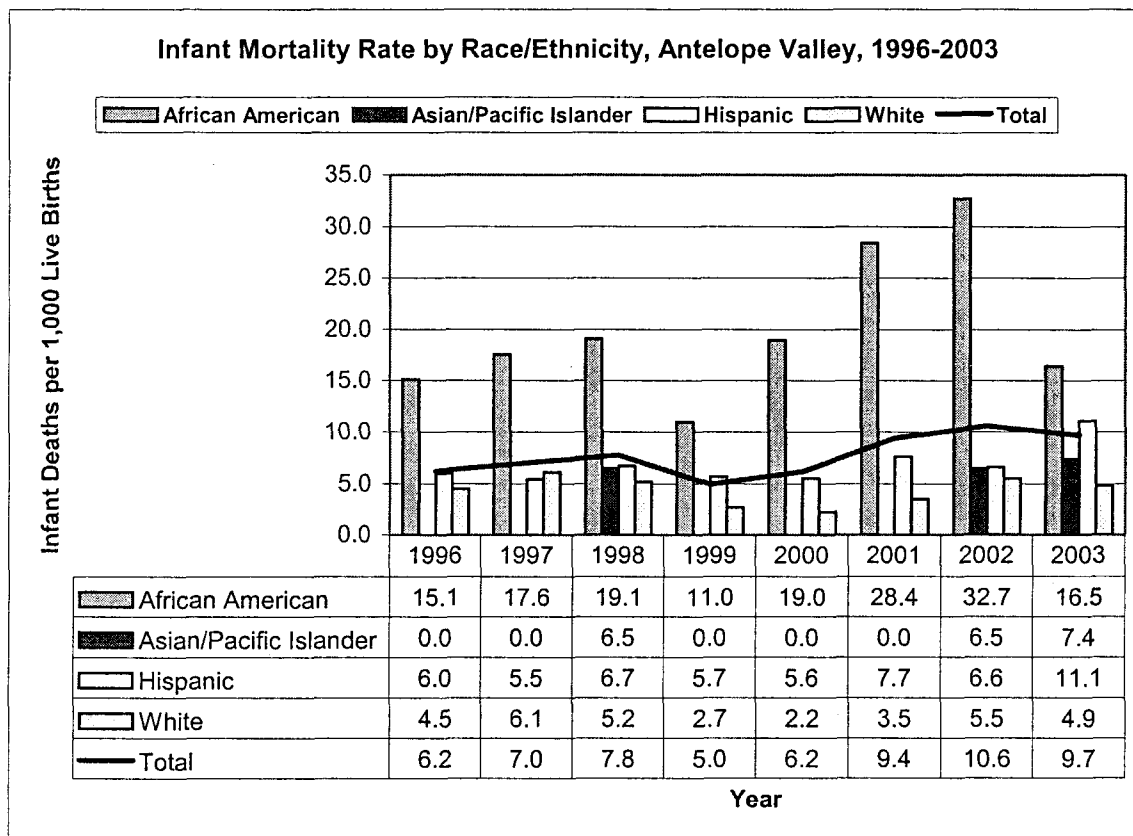


Figure 2

The 2003 data is still preliminary. The final data analysis of 2003 infant mortality in Los Angeles County will be published as part of the annual Family Health Outcomes Project Report, due to the State of California by June 2006. MCAH is responsible for developing this report and publishes the data on their website.

IV. RECOMMENDATIONS

The recommendations in this report include strategies that are evidenced-based and tailored to respond to data in the FIMR and LAMB studies that outline the underlying risk factors for infant mortality in the Antelope Valley. Some of the recommendations are multi-year efforts and are a continuation from those in the 2004 report to the Board, while others are new.

Recommendation 1

Conduct ongoing surveillance of infant deaths in Los Angeles County

Rationale: Based on changing mortality rates across ethnic groups in the Antelope Valley, ongoing investigation into the causes and factors surrounding infant deaths will provide new information to Public Health, the local health care community and the community collaborative to improve future birth outcomes.

- 1.1 By January 2006, DHS MCAH will set up a fetal-infant mortality surveillance system (FIMESS) to monitor fetal-infant mortality in Los Angeles County in a timely fashion.
- 1.2 By July 1, 2005, MCAH will begin countywide implementation of the Los Angeles Mommy and Babies Survey (LAMBS) to a sample of 10,000 women who recently delivered a baby.
- 1.3 By June 2006, DHS MCAH will review and analyze a representative sample of infant death cases, as a subset of the LAMB survey, to identify factors associated with infant deaths.
- 1.4 By June 2006, each subcontractor of MCAH Black Infant Health Program will develop a special project to improve birth outcomes, based on analysis of the infant mortality data that corresponds to their service area.
- 1.5 MCAH will continue to support its collaborative partners to determine effective interventions by providing them with updated findings from data analysis.

Recommendation 2

Increase capacity and target access to high risk family support programs for Antelope Valley women at-risk and their families.

Rationale: Despite efforts to build local infrastructure, capacity for intake of women at-risk during their pregnancies continues to be an ongoing problem in the Antelope Valley. Programs such as AVBIH, Healthy Homes of AV Hospital and the Nurse Family Partnership/Prenatal Care Guidance programs are at capacity and in order to take new clients, the programs will need to expand with additional funding. We will continue to search for new funding streams to increase capacity to meet the demand for these services.

- 2.1 MCAH in collaboration with the LABBC Center for Healthy Births will continue to pursue Interconception Care Financing strategies to increase funding for services for at-risk women and their families.
- 2.2 By February 28, 2006, the SPA 1 Area Health Officer will collaborate with the AVBBC to write 3 grant applications for funding AVHBI case management activities.
- 2.3 By March 31, 2006, the SPA 1 Area Health Officer will collaborate with Antelope Valley Partners for Health to write 2 grant applications for funding health screening/drop-in centers for women in the Antelope Valley.

Recommendation 3

Collaborate with local health care providers to ensure quality care for at-risk women and their infants.

Rationale: Based on FIMR and LAMBS data, early entry to prenatal care continues to be a challenge in the Antelope Valley, as well as access to high risk prenatal care. As capacity building in this area continues, collaboration between Public Health and local health care providers will develop new strategies to assure access to quality care.

- 3.1 By August 1, 2005, MCAH will collaborate with LABBC Center for Health Births to implement a quality care initiative for prenatal care. The initiative will focus on use of best practices that address risk factors identified in the SPA 1 FIMR project as having a significant impact on birth outcomes.
- 3.2 By September 30, 2005, the Comprehensive Perinatal Services Program (CPSP) staff will contact all obstetrical providers in Antelope Valley to: 1) present CPSP information and assist with certification process for non-CPSP providers who are interested in participating; 2) conduct quality assurance visits at CPSP-certified provider sites; and 3) provide programmatic technical assistance to CPSP certified providers as needed.
- 3.3 By July 31, 2005, MCAH will collaborate with the Office of Managed Care to ensure that pregnant Community Health Plan (CHP) members have access to CPSP services to the extent required by the Medi-Cal managed care contract. Initial efforts will concentrate on SPA 1 CHP, but will be expanded to include CHP members throughout L.A. County.
- 3.4 By June 30, 2005, the SPA 1 Area Health Office will partner with local hospitals to conduct a provider forum to review FIMR, LAMBS, and 2003 Infant Mortality Data.
- 3.5 By December 31, 2005, MCAH in collaboration with March of Dimes and the LABBC Center for Healthy Births will put on a Perinatal Health Summit to focus attention on strategies and policies to improve birth outcomes countywide.

3.6 By July 31, 2005, the SPA 1 Area Health Officer will participate as a lead agency in the Antelope Valley Healthy Babies Initiative (AVHBI) plan, and collaborate in the strengthening of the AVBBC to achieve successful birth outcomes.

Appendix I

Infant Death Review

BACKGROUND

The Antelope Valley Service Planning Area (SPA 1) infant mortality rate increased markedly, from 5.0 infant deaths per 1,000 live births in 1999 to 10.6 in 2002 (compared to 5.5 in Los Angeles County overall). The increase was disproportionately high among African Americans. The 2002 infant mortality rate for SPA 1 African Americans was 32.7 per 1,000 live births, much higher than the overall SPA 1 rate and the countywide African American rate of 13.1 per 1,000 live births.

In response to the increasing trend of infant mortality in the Antelope Valley, the National Fetal Infant Mortality Review (NFIMR) process was used to perform an intensive review of all infant deaths that occurred in SPA 1 during 2002. The purpose of the case review project was to highlight areas where interventions may be initiated to reduce infant mortality in the Antelope Valley.

METHODOLOGY

NFIMR tools include a maternal home interview and medical chart abstract modules that cover prenatal care, labor and delivery, and newborn and infant medical records. Autopsy records were obtained from the Los Angeles County Coroner's office if an autopsy was performed.

Seven Public Health Nurses (PHNs) in SPA 1 were trained to abstract medical chart information and conduct maternal interviews using the NFIMR instruments. MCAH staff reviewed the cases and compiled the data for analysis.

FINDINGS

There was a total of 53 infant deaths to 51 mothers. There were two sets of twins. Five maternal interviews were conducted, 35 Prenatal Care records, 43 Labor and Delivery records, and 43 Newborn records were located and abstracted. In addition, autopsies and SIDS Program investigations provided extensive information, particularly for the post-neonatal infant deaths. Table 1 summarizes the most frequently documented issues experienced by mothers and infants:

Mothers

- 80% experienced labor/delivery issues
- 55% had previous fetal loss
- 47% had some type of infection
- 47% were single mothers
- 39% started prenatal care after 12th week
- 28% had no referral during pregnancy
- 26% had depression/mental illness

- 24% were obese during pregnancy

Infants

- 32% had congenital birth defects
- 23% had infection
- 21% were related to safety issues (sleep position, family violence, etc.)

Recommendations

- Access to preconception and interconception care
- Access to risk appropriate obstetrical care, especially for women with known risk factors
- Ongoing case management by psychosocial professionals for those families at high risk
- Outreach and education to teach the community about perinatal risk factors and to promote early entry into prenatal care
- Exclusive breastfeeding for the first 6 months of life, continuing through the first year (Although breastfeeding data was not collected in the FIMR study, existing research suggests that breastfeeding impacts many of the risk factors identified among the 53 infant deaths.)
- Parenting education to address infant safety issues
- Collaboration among all community stakeholders

Table 1. The Most Frequently Documented Issues Experienced by Mothers/Infants, Antelope Valley Infant Review Project, 2005*

MOTHER (Total = 51)	N	%
Maternal Medical Conditions	24	47.1
Obesity	12	23.5
Anemia	7	13.7
Pregnancy Induced Hypertension	-	-
Sickle Cell Trait/Crisis	-	-
At Risk of Poor Birth Outcome	48	94.1
Previous Fetal Loss**	28	54.9
First Pregnancy Before 18	11	21.6
4 or More Live Births	11	21.6
Previous Preterm	10	19.6
Previous LBW	9	17.6
Incompetent Cervix	7	13.7
Teen Mother	5	9.8
Prenatal Care Issues (PNC)	35	68.6
PNC Started After 12th Week	20	39.2
No Referral during PNC	14	27.5
PNC Multiple Providers	8	15.7
No Prenatal Care	5	9.8
Labor and Delivery Issues	41	80.4
Placenta Problem	21	41.2
- Chorioamnionitis	7	13.7
- Placental Bleed	13	25.5
Premature Rupture of Membranes	16	31.4
Emergency C-Section	11	21.6
Umbilical Cord Problem	10	19.6
No Referral after Delivery	18	35.3
No Follow Up Appointment after Delivery	8	15.7
No Discharge Instruction Documented	8	15.7
Infection	24	47.1
Sexual Transmitted Disease	6	11.8
Urinary Tract Infection	5	9.8
Psychosocial Issues	33	64.7
Single Parent	24	47.1
Depression/Mental Illness	13	25.5
No Bereavement Support	11	21.6
Lack of Psychosocial Support	9	17.6
Father of Baby not Involved	9	17.6
Illicit Substance Abuse	5	9.8
INFANT (Total = 53)		
Infection	12	22.6
Congenital Birth Defects	17	32.1
Listed as cause of death	7	13.2
Heart defects	11	20.8
Safety Issues	11	20.8

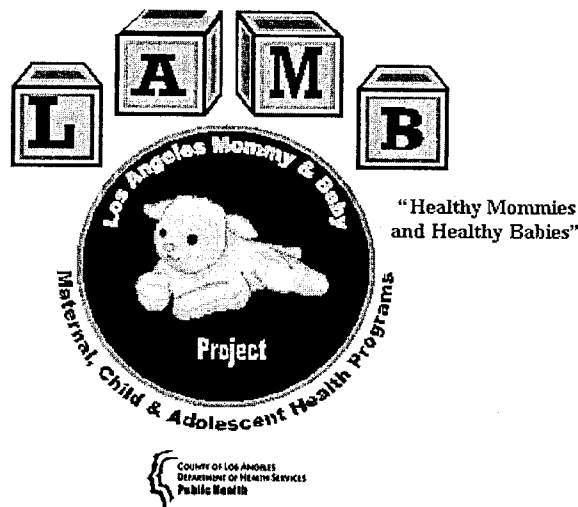
* Due to confidentiality concerns, we exclude numbers where there were fewer than 5 cases

** Including elective or spontaneous abortion

Appendix II



Infant Mortality in the Antelope Valley (Service Planning Area 1) Preliminary Findings from the Los Angeles Mommy and Baby (LAMB) Survey April 2005



Los Angeles County Department of Health Services
Maternal, Child, and Adolescent Health Programs

Cynthia A. Harding, M.P.H.
Director

Background

The Antelope Valley Service Planning Area 1 (SPA 1) infant death rate rose from 5.0 in 1999 to 10.6 deaths per 1,000 live births in 2002. Although SPA 1 represented only 6% of the infant deaths reported in Los Angeles County (LAC), the number of deaths per 1,000 live births (mortality rate) surpassed all other SPAs.

In response to distressing infant mortality statistics in Antelope Valley, the Maternal, Child, and Adolescent Health (MCAH) Programs conducted the Los Angeles Mommy and Baby (LAMB) Survey to assess potential risk factors for low birth weight (LBW) and preterm (PT) birth, adverse birth outcomes that are associated with infant mortality. The study examined areas that are known to have an impact on birth outcomes, including preconception health, interconception health, prenatal care, maternal medical conditions during pregnancy, and psychosocial and behavioral risk factors.

Methodology

LAMB questionnaire

The LAMB survey questionnaire contains 88 questions on preconception health (e.g., access to care, maternal health history); prenatal care (e.g., prenatal care satisfaction, utilization, and content); maternal medical conditions during pregnancy; psychosocial risk factors (e.g., stressful life events, food insecurity, neighborhood safety); and behavioral risk factors (e.g., alcohol, drug, and tobacco use). The questions were primarily drawn or adapted from several validated state and national surveys (e.g., University of California, Berkley's Maternal and Infant Health Assessment [MIHA]; CDC's Pregnancy Risk Assessment Monitoring System [PRAMS]). Three focus groups reviewed English and Spanish versions of the questionnaire to ensure that the instrument was linguistically appropriate and included topics relevant to SPA 1 maternal and child health concerns.

Sampling

A random sample of SPA 1 residents who delivered a live infant between May and July 2004 was selected from LAC birth records obtained from the Automated Vital Statistics System (AVSS). All birth records indicating a LBW or PT birth were selected to ensure that the sample contained a sufficient number of adverse birth outcomes.

Survey respondents completed a one-time questionnaire. Mothers were mailed a letter to introduce the study and encourage participation. A packet containing the survey and informational materials was mailed the following week. Non-respondents were sent a reminder postcard and a second survey. Those who did not respond within 6 weeks of the pre-letter mailing were contacted for a telephone interview.

Three hundred sixty-six women completed the LAMB survey, yielding a 54% response rate. Among respondents, 84 (23%) delivered LBW or PT infants. Comparisons between survey respondents and nonrespondents indicate that they were similar in terms of race/ethnicity, age, and education level.

Preliminary Data Analysis

The following section highlights the major study findings. The findings focus on the identification of risk factors that have an impact on adverse birth outcomes.

Compared to mothers who delivered normal birth weight babies, women who experienced adverse birth outcomes were:

During the preconception and interconception time periods (Tables 1a, b):

- Twice as likely to be uninsured (OR=2.3, $p=0.004$)
- Three times more likely to have high blood pressure (OR=3.4, $p=0.06$)
- Slightly more likely not to take multivitamins, although the difference did not reach statistical significance (OR=1.4, $p=0.17$)
- Nearly four times more likely to have had a previous LBW or PT birth (OR=3.7, $p=0.0003$)
- Nearly ten times more likely to have previously delivered a stillborn baby (OR=9.5, $p=0.05$)

During the pregnancy period:

Prenatal Care Experiences (Table 2):

- Twice as likely not to have “early and adequate” prenatal care (OR=2.3, $p=0.01$)
- Nearly three times as likely not to gain the ideal amount of weight during pregnancy for women who had normal or obese weight prepregnancy (OR=2.7, $p<0.05$)

Maternal Medical Conditions (Table 3)

- Two and one half times as likely to experience early labor pains (OR=2.5, $p=0.0002$)
- Twice as likely to have high blood pressure during pregnancy (OR=2.1, $p=0.02$)
- Eleven times more likely to have early water break (OR=10.9, $p=<0.0001$)
- Twice as likely to have placental problems (OR=2.3, $p=0.07$), although the difference did not reach statistical significance

Psychosocial Factors (Table 4)

- Slightly more likely to experience a higher than average number of stressful life events (OR=1.4, $p=0.01$)
- Twice as likely not to rate their most recent pregnancy as a happy time with few problems (OR=1.9, $p=0.02$)
- Over twice as likely to feel unsafe in their neighborhoods (OR=2.4, $p=0.02$)
- Slightly more likely to be single (OR=1.6, $p=0.06$), although the difference was not statistically different

Risk-Taking Behaviors (Table 5)

- Three times more likely to smoke during pregnancy (OR=3.2, $p=0.0005$).

TABLE 1A
PRECONCEPTION HEALTH FACTORS

	Low Birth Weight/Preterm				Total	p-value	⁴ OR	95% ⁵ CI	
	Yes	(%) ⁺	No	(%) ⁺					
Preconception Health									
Insured Before Pregnancy									
Yes	59	71.08	237	84.95	296	0.004*	1.00		
No	24	28.92	42	15.05	66		2.30	1.29	4.09
Assisted Reproductive Technology									
Yes	5	5.95	7	2.5	12	0.12	2.47	0.76	7.99
No	79	94.05	273	97.5	352		1.00		
¹ Smoked Before Pregnancy									
Yes	17	20.48	45	16.01	62	0.34	1.35	0.73	2.51
No	66	79.52	236	83.99	302		1.00		
Partner Abuse Before Pregnancy									
Yes	13	15.48	43	15.25	56	0.96	1.02		
No	71	84.52	239	84.75	310		1.00	0.52	2.00
Maternal Medical Conditions Before Pregnancy									
High Blood Pressure Before Pregnancy									
Yes	5	5.95	5	1.81	10	0.06 ³	3.44	0.97	12.19
No	79	94.05	272	98.19	351		1.00		
Anemia Before Pregnancy									
Yes	14	16.67	44	15.88	58	0.86	1.06	0.55	2.05
No	70	83.33	233	84.12	303		1.00		
Asthma Before Pregnancy									
Yes	7	8.33	27	9.78	34	0.69	0.84	0.35	2.00
No	77	91.67	249	90.22	326		1.00		
Pregpregnancy Nutrition									
Multivitamin Use Before Pregnancy									
Yes	30	36.14	125	44.64	155	0.17	1.00		
No	53	63.86	155	55.36	208		1.43	0.86	2.36
² Pregpregnancy BMI									
Normal Weight	34	11.84	108	13.83	142	0.92	1.00		
Underweight	9	44.74	35	42.69	44		0.82	0.46	1.66
Overweight/Obese	33	43.42	110	43.48	143		0.95	0.55	1.65

¹ In the 6 months before pregnancy

² Body Mass Index: Underweight(<19.8), Normal (19.8-26), Overweight (26-29), Obese (29+)

³ Fisher's Exact Test

⁴ OR = Odds Ratio (Unadjusted)

⁵ CI = Confidence Interval

* Significant, p < 0.05

+ Column percent

TABLE 1B
INTERCONCEPTION HEALTH FACTORS

	Low Birth Weight/Preterm				Total	p-value	⁵ OR	95% ⁶ CI	
	Yes	(%) ⁺	No	(%) ⁺					
^{1,2} Previous LBW/PT Infant									
No	40	68.97	155	89.08	195	0.0003**	1.00		
Yes	18	31.03	19	10.92	37		3.67	1.76	7.64
¹ Previous C-section									
No	41	73.21	130	79.27	171	0.35	1.00		
Yes	15	26.79	34	20.73	49		1.40	0.69	2.82
¹ Previous Stillbirth									
No	³ -	-	-	-	-	0.05 ⁴	1.00		
Yes	-	-	-	-	-		9.49	0.97	93.32 ⁷
Previous Miscarriage									
No	37	69.81	116	71.6	153	0.80	1.00		
Yes	16	30.19	46	28.4	62		1.09	0.55	2.15
Previous Abortion									
No	39	72.22	126	78.75	165	0.32	1.00		
Yes	15	27.78	34	21.25	49		1.43	0.7	2.887

¹ These numbers exclude new mothers

² LBW/PT = Low Birth Weight/Preterm

³ Due to confidentiality concerns, we excluded numbers where there were fewer than 5 cases

⁴ Fisher's Exact Test

⁵ OR = Odds Ratio (Unadjusted)

⁶ CI = Confidence Interval

⁷ Wide confidence interval due to small number of cases. Interpret results with caution.

+ Column percent

* Significant, p < 0.05

** Significant, p < 0.001

TABLE 2
PRENATAL CARE FACTORS

	Low Birth Weight/Preterm				Total	p-value	⁶ OR	95% ⁷ CI	
	Yes	(%) ⁺	No	(%) ⁺					
¹ Adequate Prenatal Care									
Yes	64	76.19	247	88.21	311	0.01*	1.00	1.26	4.35
No	20	23.81	33	11.79	53		2.34		
HIV Test Received									
Yes	64	84.21	217	87.85	281	0.41	1.00	0.66	2.80
No	12	15.79	30	12.15	42		1.36		
Satisfied with Prenatal Care									
Yes	70	87.5	252	91.3	322	0.31	1.00	0.69	3.29
No	10	12.5	24	8.7	34		1.50		
² Met Medical Prenatal Care Recommended Guidelines									
Yes	64	78.05	206	74.37	270	0.50	1.00	0.45	1.47
No	18	21.95	71	25.63	89		0.82		
³ Ideal weight gain during pregnancy (By Prepregnancy ⁴ BMI)									
Underweight									
Yes	⁵ -	-	-	-	-	0.08	1.00	0.81	18.09
No	-	-	-	-	-		3.83		
Normal Weight									
Yes	20	60.61	86	80.37	106	0.02*	1.00	1.14	6.20
No	13	39.39	21	19.63	34		2.66		
Overweight									
Yes	⁵ -	-	-	-	-	0.78	1.00	0.31	4.75
No	-	-	-	-	-		1.21		
Obese									
Yes	9	47.37	49	71.01	58	0.05*	1.00	0.96	7.70
No	10	52.63	20	28.99	30		2.72		

¹ Adequacy of Prenatal Care Utilization Index (APNCUI). Includes factors of timing of care and the number of visits

² Met all of the recommendations of the Public Health Service Expert Panel on the Content of Prenatal Care (1989). Procedures performed: blood pressure measured, sampled urine and blood, height and weight measured, pelvic exam, health history

³ Met minimum ideal weight gain: Underweight (28-40 lbs), Normal weight (25-35 lbs), Overweight (15-25 lbs), Obese (at least 15 lbs)

⁴ Body Mass Index: Underweight(<19.8), Normal (19.8-26), Overweight (26-29), Obese (29+)

⁵ Due to confidentiality concerns, we excluded numbers where there were fewer than 5 cases

⁶ OR = Odds Ratio (Unadjusted)

⁷ CI = Confidence Interval

+ Column Percent

* Significant, p < 0.05

TABLE 3
MATERNAL MEDICAL PROBLEMS DURING PREGNANCY

	Low Birth Weight/Preterm				Total	p-value	⁵ OR	95% ⁶ CI	
	Yes	(%) ⁺	No	(%) ⁺					
¹ Early Labor Pains									
No	38	46.34	191	68.71	229	0.0002*	1.00		
Yes	44	53.66	87	31.29	131		2.54	1.54	4.20
High Blood Pressure									
No	64	78.05	245	88.45	309	0.02*	1.00		
Yes	18	21.95	32	11.55	50		2.15	1.14	4.08
Vaginal Bleeding									
No	64	78.05	236	84.89	300	0.14	1.00		
Yes	18	21.95	42	15.11	60		1.58	0.85	2.93
²Placenta Problems									
No	72	90.00	265	95.32	337	0.07	1.00		
Yes	8	10.00	13	4.68	21		2.27	0.90	5.67
Severe Vomiting/ Dehydration									
No	48	58.54	184	66.43	232	0.19	1.00		
Yes	34	41.46	93	33.57	127		1.40	0.85	2.32
Diabetes									
No	71	86.59	259	92.83	330	0.08	1.00		
Yes	11	13.41	20	7.17	31		2.01	0.92	4.38
¹Water Broke Early									
No	64	78.05	272	97.49	336	<.0001**	1.00		
Yes	18	21.95	7	2.51	25		10.93	4.38	27.27
Bladder/Kidney Infection									
No	70	85.37	232	83.15	302	0.63	1.00		
Yes	12	14.63	47	16.85	59		0.85	0.43	1.68
Cervix Sewn Shut									
No	3	-	-	-	-	1.0 ⁴	1.00		
Yes	-	-	-	-	-		0.84	0.18	4.05
Hurt in a Car Accident									
No	3	-	-	-	-	0.69 ⁴	1.00		
Yes	-	-	-	-	-		0.48	0.06	3.94
Pelvic Inflammatory Disease (PID)									
No	3	-	-	-	-	0.32 ⁴	1.00		
Yes	-	-	-	-	-		2.31	0.38	14.08
Vaginal Infection/STD									
No	73	89.02	246	88.17	319	0.83	1.00		
Yes	9	10.98	33	11.83	42		0.92	0.42	2.01

¹ > 3 weeks before due date

² Such as abruptio placentae, placenta previa

³ Due to confidentiality concerns, we excluded numbers where there were fewer than 5 cases

⁴ Fisher's Exact Test

⁵ OR = Odds Ratio (Unadjusted)

⁶ CI = Confidence Interval

+Column percent

* Significant, p < 0.05

** Significant, p < 0.0001

TABLE 4
PSYCHOSOCIAL RISK FACTORS

	Low Birth Weight/Preterm				Total	p-value	⁴ OR	⁵ 95% CI	
	Yes	(%) ⁺	No	(%) ⁺					
¹ Stressed During Pregnancy									
None/little	20	28.99	62	27.43	82	0.01*	1.00		
Average	15	21.74	91	40.27	106		0.51	0.24	1.07
Above Average	34	49.28	73	32.3	107		1.44	0.76	2.76
Not enough money to buy food									
No	68	82.93	244	86.83	312	0.37	1.00		
Yes	14	17.07	37	13.17	51		1.36	0.69	2.66
Happy During Pregnancy									
Yes	52	64.2	217	77.5	269	0.02*	1.00		
No	29	35.8	63	22.5	92		1.92	1.13	3.28
² Depressed During Pregnancy									
No	40	49.38	163	59.27	203	0.11	1.00		
Yes	41	50.62	112	40.73	153		1.49	0.91	2.45
Marital Status									
Married	40	49.38	168	61.09	208	0.06	1.00		
Not Married	41	50.62	107	38.91	148		1.61	0.98	2.65
Perceived Neighborhood Safety									
Safe	61	82.43	241	91.98	302	0.02*	1.00		
Unsafe	13	17.57	21	8.02	34		2.45	1.16	5.16
Partner Abuse During Pregnancy									
No	³ -	-	-	-	-	0.27	1.00		
Yes	-	-	-	-	-		0.33	0.04	2.62

¹ Stress Score is sum of 17 items: e.g., death, robbery, discrimination, new home, recently married, work/money problems, car accident, someone moving into home, etc.

² At least 2 weeks during pregnancy

³ Due to confidentiality concerns, we excluded numbers where there were fewer than 5 cases

⁴ OR = Odds Ratio

⁵ CI = Confidence Interval

+ column percent

* Significant, p < 0.05

TABLE 5
RISK-TAKING BEHAVIORS

	Low Birth Weight/Preterm				Total	p-value	¹ OR	95% ² CI	
	Yes	(%) ⁺	No	(%) ⁺					
Ever Smoke During Pregnancy									
No	70	86.42	264	95.31	334	0.005*	1.00		
Yes	11	13.58	13	4.69	24		3.19	1.37	7.43
Alcohol During Pregnancy									
No	74	91.36	242	88.32	316	0.44	1.00		
Yes	7	8.64	32	11.68	39		0.72	0.30	1.69
Drugs During Pregnancy									
No	³ -	-	-	-	-	0.23	1.00		
Yes	-	-	-	-	-		0.41	0.09	1.83
Douche During Pregnancy									
No	75	91.46	250	89.93	325	0.68	1.00		
Yes	7	8.54	28	10.07	35		0.83	0.35	1.98

¹ OR = Odds Ratio (Unadjusted)

² CI = Confidence Interval

³ Due to confidentiality concerns, we excluded numbers where there were fewer than 5 cases

+ column percent

* Significant, p<0.05

Additional Data Analyses

This report presented the major findings of the Los Angeles Mommy and Baby Survey. The findings given identify the maternal risk factors that have an impact on adverse birth outcomes for all survey respondents who delivered LBW or PT infants. Additional analyses will be conducted to gain a deeper understanding of which women may be at risk of these birth outcomes.

The official data collection period will be closed by July 2005 to allow late respondents ample time to submit their surveys. At this time, two additional sets of analyses will be conducted. The first analysis will examine the associations between maternal risk factors and LBW or PT birth for different racial/ethnic and age groups. The second analysis will generate a complete estimation of the prevalence of maternal risk factors for women living in the Antelope Valley area, such as the percentage of women who smoked during pregnancy. Comprehensive reports on the maternal risk factors associated with LBW or PT births and on the prevalence of maternal risk factors for Antelope Valley will be disseminated to Antelope Valley community partners and other interested individuals and groups. The final findings and reports will be posted on the Los Angeles County Public Health Web site.

Implications

To improve birth outcomes in Antelope Valley, this study suggests:

Continuous medical insurance that covers preconception and interconception care

- Increase health insurance coverage among women of childbearing age, particularly prior to pregnancy.

Promote preconception and interconception care

- Preexisting medical conditions, such as high blood pressure, must be identified and controlled before pregnancy.
- Women who have given birth to a low birth weight, preterm, and/or stillborn infant should be evaluated for risk factors before becoming pregnant again and provided specific interconception services.

Risk-appropriate obstetrical care, including high-risk care

- Increase the number of women who receive early and adequate prenatal care.
- Smoking cessation during pregnancy must be a priority.
- Women in high-risk pregnancies should be monitored and educated about high blood pressure, early labor, and other complications that could arise during high-risk pregnancies.

Collaboration among all community stakeholders

- Increase awareness of mental health issues and work with police, community organizations, and Churches to improve neighborhood safety.